

**IV. REMARKS**

Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by Shirai et al. (U.S. Patent No. 6,137,687). The rejection is respectfully traversed.

Shirai et al. discloses in Fig. 5F of their patent, a structure that has a flexible board 201, a circuit chip 210 mounted on the flexible board 201, a PET sheet 212 adhered to the top surface of the circuit chip 210 by an adhesive agent.

Claim 1 is directed to a semiconductor device that includes a semiconductor chip, a wiring board and a warp preventing board. The wiring board is joined to one surface of the semiconductor chip and electrically connected to the semiconductor chip. Claim 1 recites that the wiring board has a wiring board thickness. The warp preventing board is joined to the outer surface of the semiconductor chip and is composed of the same material as that of the wiring board. Claim 1 further recites that the warp preventing board has a warp preventing board thickness that is substantially equal to the wiring board thickness. Also, claim 1 recites an external connection member for surface mounting is arranged on a surface, facing away from the semiconductor chip, of the wiring board. Claim 1 further recites that the warp preventing board is another wiring board and another semiconductor chip electrically connected to the warp preventing board is joined to a surface, facing away from the semiconductor chip, of the warp preventing board.

It is respectfully submitted that the rejection is improper because the applied art fails to teach each element of claim 1. Specifically, the applied art fails to teach an warp preventing board is another wiring board and another semiconductor chip electrically connected to the warp preventing board is joined to a surface, facing away from the semiconductor chip, of the warp preventing board. Thus, it is respectfully submitted that claim 1 is allowable over the applied art.

Withdrawal of the rejection is respectfully requested.

Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as unpatentable over Shirai In View of Ball (U.S. Patent No. 6,165,815). The rejection is respectfully traversed.

Ball discloses, in Fig. 8 of his patent, a die assembly 800 that has a pair of substrates 606 and 808 which sandwich the chip-on-chip structure formed by a pair of dies 602 and 604 adhere to each other by a layer of an adhesive 618.

Claim 5 is directed to a semiconductor device including a semiconductor chip, a wiring board joined to one surface of the semiconductor chip and electrically connected to the semiconductor chip and a warp preventing board joined to the other surface of the semiconductor chip and composed of the same material as that of the wiring board. Claim 5 recites that the warp preventing board is another wiring board and another semiconductor chip is electrically connected to the warp preventing board being joined to a surface, facing away from the semiconductor chip, of the warp preventing board.

It is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claim 5. Specifically, none of the applied art, alone or in combination, teaches or suggests the features of claim 5 recited above. Thus, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine the features of the applied art because such combination would not result in the claimed invention. As a result, it is respectfully submitted that claim 5 is allowable over the applied art.

Furthermore, the Office Action states that Shirai discloses "an external connection member (9) for surface mounting on the surface of the wiring board (1, 201) facing away from a semiconductor chip (210)." In the structure shown in Figures 6A-6F of Shirai, a circuit chip 210 is sandwiched by a pair of PET sheets 201 and 212. However, the PET sheet 201 as a base cannot be a wiring board as recited in claim 1. That is, a PET sheet cannot have an internal wiring that electrically connects an electronic component mounted on one surface thereof and an external connection electrode formed on the other surface thereof. Moreover, a PET sheet cannot have an external connection member on the surface thereof facing away from an electrical component.

The structure of the wiring board of the claimed invention is more particularly described in the specification on page 6, lines 4-16. For convenience of the Examiner,

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an illustration labeled Exhibit 1 which was provided in the previously filed amendment on January 9, 2002.

The Office Action also refers to Figure 2 of Shirai. In this structure, a ceramic board is employed for a base board 1. The base board 1 is provided with conductor layers 8 via holes that penetrate the board 1, and the conductor layers 8 are connected to external interface pins 9. However, the conductor layers 8 just vertically penetrate the ceramic board 1 and do not correspond to internal wirings as formed in the wiring board of the claimed invention.

Furthermore, it is impossible to provide a via hole in a PET sheet to obtain a combined structure of Figures 2 and 6. Therefore, even a combination of the structures shown in Figures 2 and 6A-6F cannot render the claimed invention to be obvious to one of ordinary skill in the art.

With regard to claim 5, Shirai does not disclose that a PET sheet 212 provided above a circuit chip 210 is replaceable with a wiring board or that such wiring board is joined to an inactive surface of a semiconductor chip or that another semiconductor chip is joined to a surface of such wiring board.

Claim 3 is canceled and therefore the rejection as applied to claim 3 is now moot.

For at least the reasons discussed above, withdrawal of the rejection is respectfully requested.

Claim 4 is rejected under 35 U.S.C. 103(a) as unpatentable over Shirai et al. in view of Lee (U.S. Patent No. 6,303,997). The rejection is respectfully traversed.

Claim 4 is canceled and therefore the rejection as applied thereto is now moot.

Withdrawal of the rejections is respectfully requested.

Newly-added claim 6 includes the identical features of currently pending claim 4 which has been previously examined.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone

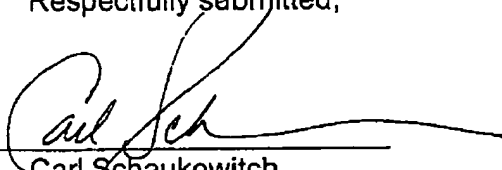
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number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

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By:   
Carl Schenkowitch  
Reg. No. 29,211

**RADER, FISHMAN & GRAUER PLLC**  
1233 20<sup>th</sup> Street, N.W. Suite 501  
Washington, D.C. 20036  
Tel: (202) 955-3750  
Fax: (202) 955-3751  
Customer No. 23353

Enclosure(s):      Amendment Transmittal  
                            Petition for Extension of Time (2 months)

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